

Principles of Ecology- Spring 2003

ABIO 570 (4 credit hours)

Instructor: Dr. Andrew Dyer
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Lecture: TTh 12:15- 1:30 SBDG 107
Lab: Th 1:40 - 4:20 SBDG 107
Office hours: T: 10:30-12:00, Th: 9:00-12:00, and by appointment

Required textbook:

Elzinga et al. 2001. Monitoring plant and animal populations. Blackwell Science

Course description

This course is intended for biology majors and will combine lecture and laboratory activities aimed at improving general understanding of ecological concepts. Much of the class will focus on application of concepts in 'experimental' situations and will involve reading, writing, analysis of data and presentations. Aspects of both plant and animal ecology will be presented and discussed. Information will be presented in the form of lectures, discussions, reading assignments, group reports, and laboratory exercises.

Laboratory description

This session will be used for exploratory labs, formal and informal discussion of lecture, text, and supplementary material, individual and group presentations, and individual projects. Assignments in lab will have due dates depending on the assignment, but the last lab of the semester is the last day any regular work can be accepted. Any supplementary reading materials assigned for lab discussions will be handed out in class or will be available for photocopying outside Room 101E in the Sciences building. On some days we will leave the campus to visit nearby areas of ecological interest.

Objectives

- To acquaint the student with the basic ecological principles describing the regulation of plant and animal abundance and distribution.
- To develop skills in experimental design, data collection, and data analysis.

Competencies

By the end of this course, the student will have demonstrated the ability to

- Discuss basic ecological principles and contemporary examples that illustrate those principles.
- Describe potential mechanisms by which organisms interact and compete for resources in nature.
- Describe basic methods for quantifying ecological interactions in the field and through statistical analysis.
- Be able to present results from a field experiment in front of an audience.

Grading (about 700 total points)

Testing on principles, examples – 3 exams of equal size (= 300 pts)

Essay-style on understanding of material, may be take home

May include short reading assignments

Reading assignment write-ups (7 papers = 150 pts)

Data analysis on handouts and lab exercises (5 assignments = 250 pts)

May included creating and reading bar graphs, regressions, statistical interactions; calculating means, standard errors, percent; interpreting statistical results

Additional comments

1. Preparation for class includes reading any assigned material beforehand.
2. If you are having difficulty with any aspect of this course, please come see me as soon as possible. If my regular office hours conflict with your schedule, you can make an appointment to see me at a more convenient time.
3. If you have a physical, psychological, and/or learning disability which might affect your performance in this class, please contact the Office of Disability Services, 126A B & E, (803) 641-3609 as soon as possible. The Disabilities Services Office will determine appropriate accommodations based on medical documentation.
4. You will be expected to endorse the following Honor Pledge on every quiz or exam:
On my honor as a University of South Carolina Aiken student, I have neither given nor received any unauthorized aid in this assignment/examination. To the best of my knowledge, I am not in violation of academic honesty.
5. Students are expected to adhere to the University attendance policy as stated in the Student Handbook. If a student has more than 4 unexcused lab absences, a failing grade will be issued. If tardiness to lecture causes unnecessary interruptions, the front door to the classroom will be locked at the beginning of the class.

ABIO 570 tentative course outline					
Week	Date		Topic	Chapter or reading	Laboratory
1	Jan	9	Scaling in ecology		1: stat review
2	Jan	14	Natural selection		
		16	and		2: leaf sampling exercise
3	Jan	21	evolution		
		23	(no lecture)		3: Trip to Hitchcock Woods - grass sampling
4	Jan	28	Adaptation	Finches- Grant	
		30	and		4: Grass sample exercise
5	Feb	4	variation		
		6	Competition	Gerbils- Kotler	5: Discussion
			Exam1		
6	Feb	11	Competition		
		13	(no lecture)		6: Trip to Henderson Pond
7	Feb	18	Interactions		
		20	Connectivity	Cascades- Carpenter	7: transect sampling exercise
8	Feb	25			
		27	Disturbance		8: Discussion
9	Mar	4	Succession	Forest fragments- Bierregaard	
		6	(no lecture)		9: Trip to Heggie's Rock - succession
			Exam2		
10	Mar	11	Spring break		
		13			(no lab)
11	Mar	18	Equilibria	Fire ecology- Minnich	
		20			10: dispersal exercise
12	Mar	25	Metapopulations		
		27	(no lecture)		11: Trip to Hitchcock Woods – fire ecology
13	Apr	1	(no lecture)	Jasper B'flies- Harrison	
		3	(no lecture)		(no lab)
14	Apr	8	Co-adapted genes	Bt corn- Saxena	
		10	Masters Break		(no lab)
15	Apr	15	Invasions		
		17			Trip to Hitchcock Woods
					12: forest sampling exercise
16	Apr	22	Conservation		
		24			13: Discussion
Friday	May	1	Final exam-2 pm		

